Rymer, Edwina

From: Dorsey, Nancy
Sent: Friday, October 03, 2014 12:57 PM
To: Bates, William;Bierschenk, Arnold;Dellinger, Philip;Hildebrandt, Kurt;Johnson, Ken-E;Kobelski, Bruce;Lawrence, Rob
Subject: FW: Monitoring Subgroup - NEWS

Does his reply make sense to anyone?

From: Bauer, Robert A [mailto:rabauer@illinois.edu]
Sent: Friday, October 03, 2014 12:49 PM
To: Dorsey, Nancy; Ben Grunewald (ben@gwpc.org)
Cc: Dellinger, Philip
Subject: RE: Monitoring Subgroup - NEWS

Nancy:

I'm not advocating any specific methods, but presenting information we are finding through research to be aware of for any regulation concerning distances of events from injection wells to be used for action levels. These discrepancies are moving the events farther out from the injection wells. If a regulation has some threshold distances for taking action, the mis-plotted location may be outside the distance. For the velocity models - one may be able to find someone to use/make a velocity model for the area to definitely push event(s) outside any regulated distance.

Just information for a conservative factor - not advocating more accuracy.

Bob

From: Dorsey, Nancy [Dorsey.Nancy@epa.gov]
Sent: Friday, October 03, 2014 10:46 AM
To: Bauer, Robert A; Ben Grunewald (ben@gwpc.org)
Cc: Dellinger, Philip
Subject: RE: Monitoring Subgroup - NEWS

Hi Bob,

Actually for the well distances, it is more conservative to consider the distances as originally reported, not the nice tight relocated events you cited. Using the original USGS reported locations even 10 km may not pick all of them up.

Nancy

From: Bauer, Robert A [mailto:rabauer@illinois.edu]
Sent: Friday, October 03, 2014 10:41 AM
To: Ben Grunewald; Holland, Austin A.; Justin Rubinstein; Dorsey, Nancy; Tyrrell, Timothy; Craig Pearson; Scott Ausbrooks; Gertson, Rod; Linda McDonald; Bates, William; ROVELLI, BRIAN (GE Global Research); smunews@smu.edu; ccabarcas@hilcorp.com; furnace@hilcorp.com; rex@kgs.ku.edu; Rick.Simmers@dnr.state.oh.us
Subject: RE: Monitoring Subgroup - NEWS

All:

I'm sorry that I will not be able to attend the subgroup meeting. Attached are my comments concerning the posted agenda items.

Bob Bauer

From: Ben Grunewald [ben@gwpc.org]
Sent: Monday, September 29, 2014 5:13 PM
To: Ben Grunewald; Holland, Austin A.; Justin Rubinstein; Dorsey, Nancy; Tyrrell, Timothy; Craig Pearson; Scott Ausbrooks; Gertson, Rod; Bauer, Robert A; Linda McDonald; Bates, William; ROVELLI, BRIAN (GE Global Research); smunews@smu.edu; ccabarcas@hilcorp.com; furnace@hilcorp.com; rex@kgs.ku.edu; Rick.Simmers@dnr.state.oh.us
Subject: RE: Monitoring Subgroup - NEWS

Please see the Sunday morning agenda…

DRAFT AGENDA closed working session on Sunday morning from 8:00-noon.

7:00 Breakfast provided
7:30-8:15 Separate Subgroup meetings
All Workgroups together 8:15-noon

8:15–9:00 - Ground Motion Subgroup

- Ground motion (i.e. peak acceleration, peak particle velocity, etc.) could be (may be) (might be) a better measurement of seismic impact to surface structures since it measures locally that energy generated by an event in units that can be directly correlated to damage potential to surface structures.
- Richter Magnitude is the standard measurement for intensity of seismic events. It is used more to quantify the total energy involved with a seismic event which then can be used somewhat subjectively to predict damage potential to surface structures. There is wider variability in the degree of surface structure damages resulting from a 4.5 Magnitude event in one location versus the damage that might be experienced from the same magnitude event in another location. A seismic event will have a single magnitude value established, however the ground motion values will vary considerably depending on the depth of the event, local geology, and distance from the epicenter.
- The potential for damage to a specific structure and/or local infrastructure will be dependent on the time duration, frequency content, and amplitudes of the ground shaking.
- Local or regional modeling is necessary to attempt to correlate magnitude intensity with ground motion values which should be a better measurement for damage potential than magnitude alone. Ground motion is highly dependent on local stratigraphic/geological conditions and depth, and local monitoring data (including accelerometer data) are necessary to develop a more accurate predictive model.
- If ground shaking is to be considered for use as a "threshold" for stoplight systems; models will need to effectively correlate earthquake energy release (e.g., Richter magnitude estimates) considering relevant ground shaking metrics (e.g., PGA / PGV, duration, frequence).
- The broad public may not fully understand the technical basis for characterizing ground shaking and assessing hazards from ground shaking, so there may be local need for enhanced public communication/education on ground shaking hazards and public news reporting of earthquake magnitudes (i.e. Richter magnitudes).

9:00-9:45 - Monitoring Subgroup

- Review of Current Monitoring Capabilities
- Description of Future Monitoring Requirements
- Discussion of Proposed Models for Implementing, Funding and Operating Future Monitoring Requirements

9:45-10:00 Break
10:00-11:00 – Traffic Light Subgroup

- Brief overview of traffic light decision tool
- Brief status summary by state
- Discussion: Attributes to be considered (pros and cons)

    - Rational
    - Criteria
    - Pros and cons
    - How to combine metrics for decision criteria (magnitude and surface motion metrics)
      Actions at each light
    - How to get back to green
    - Actions at each light
- Other

11:00-11:30 – Data Sharing

- Regulators
    - Data currently collected
    - Additional data desired
- Industry
    - Data currently collected
    - Additional data desired
- Nature of proprietary agreements
    - Business
    - Legal
    - Etc.
- Possible compartmentalization of data
- Other possible solutions
- General information sharing to with various stakeholders
    - An online repository of general available information